

Title (en)

A scannerless range imaging system having high dynamic range

Title (de)

Farbbildgebendes telemetrisches System ohne Scanner mit grossem Dynamikbereich

Title (fr)

Système d'imagerie et de télémétrie en couleur sans scanner à haute gamme dynamique

Publication

EP 1347636 A2 20030924 (EN)

Application

EP 03075686 A 20030310

Priority

US 10364002 A 20020321

Abstract (en)

A scannerless range imaging system includes an illumination system for illuminating a scene with modulated illumination of a predetermined modulation frequency, and an image intensifier receiving reflected modulated illumination and including a modulating stage for modulating the reflected modulated illumination from the scene with the predetermined modulation frequency. An image responsive element includes an array of individual pixels for capturing images output by the image intensifier, whereby the modulation of the reflected modulated illumination incorporates a phase delay corresponding to the distance of objects in the scene from the range imaging system. A transmittance filter, including a plurality of filter elements having a spatially varying pattern of transmittance, are arranged in a one-to-one mapping with respect to the pixels forming the image responsive element. The spatially varying pattern of transmittance provides a plurality of separate exposures which are subsequently combined to form an output image with an expanded dynamic range. <IMAGE>

IPC 1-7

G01S 17/89; **G01S 7/481**; **H04N 5/225**

IPC 8 full level

G01B 11/00 (2006.01); **G01S 7/4915** (2020.01); **G01S 17/36** (2006.01); **G01S 17/89** (2006.01); **G01S 17/894** (2020.01); **G06T 1/00** (2006.01); **H04N 5/225** (2006.01); **H04N 5/235** (2006.01); **G01S 7/481** (2006.01); **G01S 7/491** (2020.01)

CPC (source: EP US)

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EP 1347636 A2 20030924; **EP 1347636 A3 20041103**; IL 154173 A0 20030731; JP 2003294417 A 20031015; US 2003178549 A1 20030925; US 6707054 B2 20040316

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